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# TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number

09/811,162

Filing Date

March 16, 2001

First Named Inventor

MARTINS-GREEN, Manuela

Group Art Unit

1647

Examiner Name

Regina M. DeBerry

Total Number of Pages in This Submission

44

Attorney Docket Number

407E-000500US

## ENCLOSURES (check all that apply)

- ☐ Fee Transmittal Form
- ☐ Fee Attached
- ☐ Amendment / Response
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/Incomplete Application
- ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53

- ☐ Assignment Papers (for an Application)
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition Routing Slip (PTO/SB/69) and Accompanying Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Small Entity Statement
- ☐ Request for Refund

- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Additional Enclosure(s) (please identify below):

Declaration under 37 CFR 1.132; Dr. Martins-Green's Curriculum Vitae; receipt acknowledgment postcard; **3 pages of figures**

### Authorization to Charge Deposit Account

Please charge Deposit Account No. 50-0893 for any additional fees associated with this paper or during the pendency of this application, including any extensions of time for consideration of the documents enclosed.

Remarks

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## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name

Irene Pleasure, Reg. No. 45,506, Quine Intellectual Property Law Group, P.C.

Signature

*Irene Pleasure*

Date

November 12, 2002

## CERTIFICATE OF MAILING

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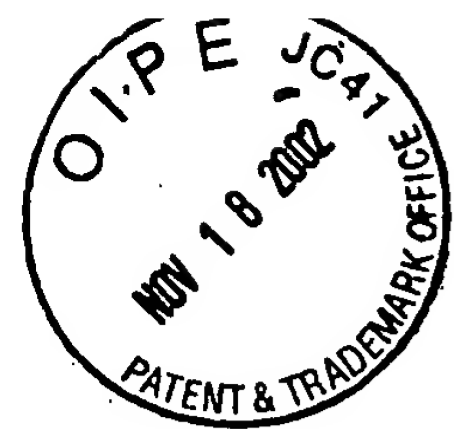
Signature

*Amelia Groth*

Date

November 12, 2002

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## CURRICULUM VITAE

### MANUELA MARTINS-GREEN

Department of Cell Biology and Neuroscience  
University of California, Riverside, CA 92521  
Tel: (909) 787-2585; Fax: (909) 787-4286  
email: mmgreen@ucr.ac1.ucr.edu

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November, 2002

#### EDUCATION

B.S., Biology, University of Lisbon, Portugal.

M.S., Plant Pathology, University of California, Riverside.

Ph.D., Zoology, University of California, Davis.

Dissertation: Ultrastructural and Immunolabeling Studies of the Neural Crest:  
Processes Leading to Neural Crest Cell Emigration.

Postdoctoral Researcher, Laboratory of Cell and Molecular Biology, Lawrence Berkeley  
Laboratory, Berkeley, Ca, 1987-1988.

National Research Service Award (NRSA) Postdoctoral Fellowship, Laboratory of Cell and  
Molecular Biology, Lawrence Berkeley Laboratory, Berkeley, CA, 1988 - 1991.

#### HONORS AND AWARDS

##### Predoctoral

Fulbright Travel Grant for graduate study in USA.

Departmental Fellowship, Department of Plant Pathology, UC Riverside.

Elected to Phi Kappa Phi.

NIH Traineeship, Cellular and Molecular Training Grant, UC Davis.

Regents Fellowship, UC Davis.

Graduate Research Award, UC Davis.

Jastro-Shields Research Award, UC Davis.

##### Postdoctoral

NRSA Postdoctoral Fellowship (NIH), Lawrence Berkeley Laboratory.

##### Faculty

Associate Editor, Journal of Molecular Oncology, 1995-98

Regents Faculty Fellowship, UC Riverside, 1995-1996

Department of Defense Breast Cancer Review Panel, Immunology Study Section #2, 1998-  
present

Speaker for the Annual Wound Healing Society Meeting, 1998.

Nominee, Academic Achievement Junior Award, Women in Cell Biology, ASCB, 1998.  
 Participant, Gordon Conference on Chemokines and their Receptors, 1998.  
 Invited Speaker, Keystone Meeting on Chemokines and their Receptors, 1999.  
 Participant, Gordon Conference in Wound Repair, 1999.  
 Participant, Gordon Conference in Angiogenesis, 1999.  
 Faculty Development Award, UC Riverside, 1999-2000  
 Visiting Scientist, Lab. of Molecular Immunoreg., Natl. Cancer Inst., Frederick, MD., 2000.  
 Nominee for the Outstanding Teaching Award at UCR, Spring 2000  
 Participant, Gordon Conference in Vascular Biology, June 2000.  
 Participant, Gordon Conference on Chemokines and their Receptors, 2000.  
 Selected to organize a pre-meeting sub-group symposium on "The Cell Biology of Chemokines in Host Defense, Wound Healing and Disease" for the annual ASCB meeting, 2000.  
 Invited to participate as a chemokine expert on a workshop sponsored by the Radiation Research Program, Division of Cancer Treatment and Diagnosis, NCI. September, 2000.  
 Member of the American Society for Cell Biology Standing Committee WICB 2001- present  
 Speaker, ASCB 42<sup>nd</sup> Annual meeting in the Angiogenesis Minisymposium, 2001.  
 Abstract selected for the ASCB Press Book, 2001.  
 Member of the UCR Committee on Committees 2002-05.  
 Chair of the Bioengineering Session at the Wound Healing Society Annual Meeting, May 2002  
 Main speaker at the Gordon Conference in Vascular Biology, Ventura CA, February 2003

### **FIELD OF SPECIALIZATION**

Cell and Molecular Biology of chemokines in Wound Healing and Tumorigenesis.

### **EMPLOYMENT HISTORY**

Adjunct Assistant Professor, Department of Molecular Oncology, Rockefeller University, N.Y., N.Y. 1991-1992.

Research Scientist II (Faculty Series), Cell and Molecular Biology Division, Lawrence Berkeley Laboratory, Berkeley, CA, 1992-1993.

Assistant Professor of Biology, University of California, Riverside, CA, Dept. of Biology, 1993-1999.

Assistant Professor of Cell Biology, University of California, Riverside, CA, Dept. of Cell Biology and Neurosciences, 1999-2000.

Associate Professor of Cell Biology, University of California, Riverside, CA, Dept. of Cell Biology and Neurosciences, 2000-present.

### **RESEARCH EXPERIENCE**

Graduate Study, Department of Zoology, UC Davis. Study of the processes underlying the initiation of migration of neural crest cells, using transmission electron microscopy, light microscopy, immunofluorescence, immunogold techniques, tissue culture and electrophysiology, including microinjections by iontophoresis. 1982-87.

Postdoctoral Study, Laboratory of Cell and Molecular Biology, Lawrence Berkeley Laboratory, Berkeley, CA. Studies on wounding and the influence of wound factors on viral carcinogenesis and functional studies of the 9E3 gene and its product, the chicken Chemotactic and Angiogenic Factor (cCAF), using molecular cloning techniques, northern and Southern blot analysis, *in situ* hybridization, protein chemistry, immunohistochemistry, tissue culture and development of antibodies to cCAF. 1987-91.

Adjunct Assistant Professor, Laboratory of Molecular Oncology, Rockefeller University, New York, NY. Studies on the biochemical and molecular properties of cCAF chemokine and their implications for growth regulation, chemotaxis, angiogenesis, wound healing and tumor growth in chicken embryos and newly-hatched chicks.

Research Scientist II (Faculty Series), Cell and Molecular Biology Division, Lawrence Berkeley Laboratory, Berkeley, CA. Continuation of studies on the development of RSV-induced wound tumors. Additional studies on the biochemical and molecular properties of the cCAF chemokine and their implications for growth regulation, chemotaxis, angiogenesis, wound healing and tumor growth.

Assistant Professor, Department of Biology, University of California, Riverside, CA. Continuing studies on the biochemical and molecular properties of chemokines and their implications for growth regulation, chemotaxis, angiogenesis, wound healing and tumor growth.

Assistant Professor, Department of Cell Biology and Neurosciences. This new department was created 1 July 1999. My research continued unchanged but in an environment of much closer colleagues.

Visiting Scientist, Laboratory of Molecular Immunoregulation, National Cancer Institute, Frederick, MD. Jan.-Sept., 2000 on sabbatical leave at this institute of NIH as the guest of its Chief, Dr. J. Oppenheim, collaborating with him and his team on research involving immunological activities of chemokines.

Past and current collaborators:

P. Murphy, NIH, chemokine receptors.

J. Oppenheim, NCI, Frederick, MD., immunological studies of chemokines

F. Sladek, UC Riverside, transcriptional regulation of cIL-8

S. Sudol, Mount Sinai Medical School, NY., src-like tyrosine kinase Yrk.

P. Talbot, UC Riverside, on effects of smoking on angiogenesis *in vivo*.

R. Ye, University of Chicago, on isolation and characterization of the receptor for the cCAF protein.

A. Sharrocks, University of Manchester, School of Biological Sciences, Transcription regulation of cIL-8.

- V. Lingappa, Department of Physiology, UCSF, San Francisco. Chemokines and secretory pathways.
- R. Montesano, Department of Morphology and Cell Biology, University Medical Center, Geneva 4, Switzerland. The effects of chemokines on epithelial morphogenesis.
- M. Hauer-Jensen, Department of Surgery and Pathology, Arkansas Cancer Research Center, Little Rock, AR 72205. The effects of chemokines on delayed effects of radiation therapy.

## **RESEARCH PROGRAM**

My research program focuses on understanding the molecular mechanisms involved in activation, expression, function and mode of action of chemokines in wound healing and tumor development. Wound healing and tumorigenesis share many common cellular processes that make studies in one relevant to the other. Chemokines are small, secreted, stress-response cytokines that are highly conserved among higher vertebrates and are importantly involved in these processes as well as in inflammatory diseases, viral infections (e.g. HIV), atherogenesis, and fibrosis. Therefore, it is important to identify the agents that stimulate the production of these proteins and the molecular mechanisms of this stimulation, and to determine their detailed functions and modes of actions, so that ways can be developed to modulate their functions *in vivo*.

Unfortunately, a murine homologue of IL-8 has not been identified, nor has the homologue of IL-8's specific receptor (CXCR1), and wounds in rodents are more regenerative than in humans, rabbits or chickens. Therefore, we study hIL-8 and its orthologues in rabbits and chickens and use these animal models for studies *in vivo*. These systems have the advantage that both rIL-8 and cIL-8 (cCAF) are highly homologous to hIL-8 and that wounds in rabbits and chickens heal and scar very similarly to those in humans. In addition, the chorioallantoic membrane (CAM) of the chicken embryo is readily accessible for studies of angiogenesis and leukocyte chemotaxis. We are currently expanding our work on hIL-8 to humans by using a novel all-human skin organ culture that we have developed with an aim toward eventual clinical applications.

We have concentrated on determining processes of activation of the IL-8s by stimulators that are relevant to wound healing and tumor development and on determining its functions and modes of action. In ongoing studies, our aim is to: (1) Identify commonalities in the signal transduction and transcription activation mechanisms that may lead the way to regulating the expression of these chemokines for potential modulation of expression *in vivo*; (2) test the effects of IL-8 on the principal cellular components of the granulation tissue of wounds and the stroma of tumors -- fibroblasts, myofibroblasts, endothelial cells, keratinocytes and immune cells -- accompanied by tests directly to wounds and tumors; (3) isolate and characterize the receptor(s) for the IL-8s to determine their mechanisms of action in wound healing and tumor development. (4) Having recently identified that hIL-8 stimulates angiogenesis by sprouting, we are now using our human skin organ culture and rabbits to investigate the molecular mechanisms by which this chemokine initiates this process.

Because chemokines are stress response proteins, we are also studying the effects of both first- and second-hand cigarette smoke (both stress-inducing agents) on chemokine expression and how they affect chemokine function in normal and abnormal healing.

### **PATENT APPLICATIONS**

1. US Patent Application no. 1279-2981/09906037 for ACompositions containing C-terminal polypeptides for angiogenic chemokines and methods of use.@ Filed October 29, 1999.
2. US Patent Application no. 09/811,162 for AChemokines and methods for inducing the differentiation of fibroblasts to myofibroblasts.@ Filed March 16, 2001.
3. US Patent Application no. 09/429,050 for "3-D organ culture for skin replacement therapy". Filed December 7<sup>th</sup> 2001.
4. *US Patent Application no. UC 2002-444-1 for "A novel device for human wound healing". In preparation.*

**GRANT ACTIVITY**

<u>Agency</u>	<u>Title</u> <u>Investigators</u>	<u>Date</u>	<u>Amount</u>	<u>PI Status</u>
National Institutes of Health	Functional analysis of the 9E3/CEF4 gene. (Funding awarded 3 months in advance of usual start-up date to accelerate my research.)	9/1/93 - 8/31/97	\$350,000	PI
National Science Foundation Acad. Facilities Initiative	Acquisition of Analytical Electron Microscopy Facilities (Includes \$1,150,000 in UC matching funds.)	9/1/94 - 8/31/99	\$1,700,000	Co-PI
Cancer Research Coord. Committee	Determination of the role of cCAF (the product of the 9E3 gene) in RSV tumor development.	7/95 - 6/96	\$ 35,000	PI
Cancer Research Coord. Committee	Determination of the role of cCAF (the product of the 9E3 gene) in RSV tumor development. (renewal)	7/96 - 6/97	\$ 30,000	PI
NSF Academic Research Infrastructure Program	Acquisition of a protein microsequenator	8/96-7/99	\$116,000	Co-PI
Tobacco-Related Disease Research Program	Fertility, Smoking, and Early Mammalian Development	7/97 - 6/00	\$452,243	Co-PI
AHA/Western Affiliates	Mechanisms of activation of the MCP-1 chemokine by cigarette smoke components, with application to atherogenesis.	7/00 - 12/02	\$120,000	PI
Tobacco Related Disease Research Program	The effects of MSW and SSW on fibroblasts, crucial cells involved in wound healing.	7/01 - 7/03	\$75,000	PI
Tobacco Related Disease Research Program	Cigarette smoke and MCP-1: Expression <i>in vivo</i> and atherogenesis.	7/02 - 7/04	\$50,418	PI

MERCK	Gift to continue studies on development of a three-dimensional co-culture system for studies of wound healing and tumorigenesis.	Spring 2002	\$10,000
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<u>Agency</u>	<u>Title</u> <u>Investigators</u>	<u>Date</u>	<u>Amount</u>	<u>PI Status</u>
MARC U*STAR Undergraduate Research Program	Minority Access to Research Careers, Undergraduate Student Training in Academic Research (Administered by National Institute of General Medical Sciences. NIH	12/01 - 6/04	\$1,992,402	Cooperating Faculty Member
NSF Major Instrumentation Program	Acquisition of a Transmission Electron Microscope to Support UCR's Accelerated Growth in the Cell/Molecular/Development Biology Program	09/01 08/04	\$400,00	Cooperating Research Faculty Member

### Pending Awards

NIH/NIGMS	Inflammation-induced angiogenesis:  Mechanisms of IL-8 function. (resubmitted 7/1/02)	4/03-  3/08	\$1,658,370	PI
NIH through Loma Linda	Studies on porphyromonas gingivalis-induced apoptosis and cardiocascular disease	4/03- 3/08	\$14,434	Co-PI
Phillip Morris	MCP-1 functions in cigarette smoke-induced atherogenesis	7/03- 6/06	\$480,703	PI
NSF	Center for Nanoscaffolding and Tissue engineering	pre-proposal	\$5,303,215	Co-PI

### UC Funds

UC Toxic Substances	Mechanisms of activation of chemokine genes by cigarette Smoke	1/99 - 12/99	\$12,500	PI
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Regents' Faculty Fellowship		7/95-6/96	\$3,600	PI
		7/96-6/97	\$4,500	PI

### Intramural Awards

Undergraduate Instruction Improvement	Introduction of computer-assisted instruction in several upper division biology classes.	1994	\$3,500	Co-PI Talbot	P.
Academic Senate	UCR Travel Grant	1993	\$1,000	PI	
	Summer Research Support	1993	\$1,400	PI	
	UCR Travel Grant	1994	\$1,000	PI	
	Intramural Grant	1994	\$1,300	PI	
	UCR Travel Grant	1995	\$500	PI	
	Intramural Grant	1995	\$1,300	PI	
	Intramural Grant	1996	\$1,300	PI	
	UCR Travel Grant	1996	\$500	PI	
	Intramural Grant	1997	\$1,600	PI	
	Intramural Grant	1998	\$2,000	PI	
	Intramural Grant	1999	\$2,350	PI	
	Intramural Grant	2000	\$2,050	PI	

<u>Agency</u>	<u>Title</u> <u>Investigators</u>	<u>Date</u>	<u>Amount</u>	<u>PI Status</u>
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	Intramural Grant	2001	\$2,400	PI
	Intramural Grant	2002	\$1,500	PI
CNAS Bridge Funds	To continue my studies on the functional analysis of the cCAF chemokine.	10/98 - 7/99	\$16,000	PI
Vice Chancellor of Research Seed Money Grant	Development of a three-dimensional co-culture system for studies of wound healing and tumorigenesis.	1/00 - 12/00	\$10,000	PI
CNAS Bridge Funds	Postdoctoral support while awaiting NIH renewal	7/02-6/03	\$40,000	PI

**Research funds awarded to students in my lab and under my supervision**

President's Undergraduate Research Scholarship	to Mr. Scott Burkett for research in my laboratory	1994-95	\$980.00	
Undergraduate Mini Grant	to William McChesney (Spring Quarter)	1994-95	\$300.00	
Undergraduate Senior Fellowship	to Ronald Zhang (Winter & Spring Quarters)	1995-96	\$700.00	
President's Undergraduate Research Fellowship	to Harry M. Green	1998-99	\$1,100.00	
President's Undergraduate Research Fellowship	to William Wong	2000-01	\$1,000.00	
<u>Agency</u>	<u>Title</u> <u>Investigators</u>	<u>Date</u>	<u>Amount</u>	<u>PI Status</u>
Undergraduate Mini Grant	to Joseph Manlolo (Spring Quarter)	2001-02	\$250.00	
President's Undergraduate Research Fellowship	to Joseph Manlolo	2002-03	\$1,000.00	

## **PROFESSIONAL ACTIVITIES**

### **Editorships:**

Associate Editor: Oncology Reports, 1995-98

### **Committee Service:**

Congressional Liaison Committee, American Society for Cell Biology, 1996-present  
UC Riverside representative for Western Regional Developmental Biology Society, 1996-98

Membership Committee for the Wound Healing Society, 1998-2002.

Member of the Advisory Panel for the Laboratory of Molecular Oncology, NCI, Frederick for presentations to its Site Visit Committee in March, 2000.

Member of the American Society for Cell Biology Standing Committee WICB, 2001-present

Representative of the WICB on the Standing Education Comm. for ASCB, 2002- present

### **Reviews:**

#### **Books**

Molecular Cell Biology by J. Darnell et al. (Chapter on Extracellular Matrix), Freeman, 1990.

Biology by P. Raven, Wm. C. Brown Publ. (2 Chapters). 1995-96.

Cell and Molecular Biology: Concepts and Experiments by G. Karp, John Wiley and Sons. 1996.

Essential Cell Biology (Alberts et al., eds.), Garland Publications (1998-1999)

#### **Journals**

Circulation Research

Cytokine

Developmental Biology

Gene

International Journal of Biochemistry and Cell Biology

J. of Leukocyte Biology

Journal of Cell Biology

Microvascular Circulation

Oncology Reports

Oncogene

Radiation Research

#### **Proposals**

UC Campus-DOE Laboratory Collaborative Program: 15 proposals, 1994-96

NSF 1991 - present

MHRC, 1991

DOD/BCRP, Immunology study section #2, 1998 - present

United States-Israel Binational Science Foundation, 2001

### **Other Activities:**

Nominated Dr. Mina Bissell for the 1993 ASCB Women in Cell Biology senior award.

She was selected to be the recipient.

Nominated Prof. H. Hanafusa for the 1998 ASCB Women in Cell Biology senior award.

Nominated Dr. Mina Bissell for the 1999 AACR Clowes Memorial Award. She was selected to be the recipient.

Nominated Professor P. Talbot for the 1999 Chancellor's Award for Mentoring of Undergraduate Research. She was selected to be the recipient.

Nominated Professor P. Talbot for Fellowship in the AAAS, 2002. Still pending.

Nominated Professor N. Beckage for Fellowship in the AAAS, 2002. Still pending.

### **Meetings attended**

#### **American Society for Cell Biology (ASCB)**

Annual Meetings: 1985-1991, 1993 - present

#### **Gordon Conferences**

Fibronectin: 1985

Chemokines and their Receptors: 1996, 1998, 2000.

Wound Repair and Regeneration: 1999, 2001.

Angiogenesis: 1999.

Vascular Biology: 2000, 2003.

#### **Keystone Meetings**

Wound Healing and Tissue Engineering 1993, 1996

Chemokines and Chemokine Receptors 1998, 2001.

ECM/Angiogenesis in Cancer and Other Diseases: From Genes to Function to Therapy 2002.

#### **Wound Healing Society**

Annual Meetings: 1996 – present

#### **Other**

First Southern California Wound Repair Symposium, 2001

First Southern California Wound Repair Symposium, 2002

Southern California Tissue Engineering Symposium, 2002

### **ACADEMIC SERVICE**

Student representative, Zoology Dept. committee to select TAs, 1984/85 & 1986/87, UC Davis.

Treasurer, Zoology Graduate Student Association, 1985-87. UC Davis.

Student representative, Zoology Dept. Course Eval. Committee, 1985-86. UC Davis.

Member, search committee for new faculty member in Cell Biology, 1987. UC Davis.  
 Student representative, Zoology Department Fellowship Committee, 1987. UC Davis.  
 Thesis Committees for MA, MS and PhD students in Biology, UC Riverside, 1993 -  
 Electron Microscopy Committee, Department of Biology, UC Riverside, 1994 -  
 Reorganization Committee, Department of Biology, UC Riverside, 1994.  
 Oversight Committee, UC Riverside Electron Microscopy Facility, 1994-  
 Graduate groups in Biomedical Sciences and Environmental Toxicology, at UC Riverside, 1993

Graduate groups in Biochemistry and Molecular Biology at UC Riverside, 1996 -  
 Graduate groups in Cell Molecular and Developmental Biology and in Neurosciences at UC  
 Riverside, 1997 -

Admissions Committee for Environmental Toxicology Graduate Group 1994-96.  
 Search Committee for Molecular Biology position, Department of Biology. 1994-95.  
 Diversity Initiative Task Group on Faculty Hiring, UC Riverside, 1995-1996.  
 Search Committee for the Administrative Analyst in the Biology Department, Fall 1996.  
 Search Committee for a Vascular Biology position; Division of Biomedical Sciences. 1996-97.  
 Newell Committee, Department of Biology, 1996-1999.  
 Recruitment Committee of the Graduate Group of Biochemistry and Molecular Biology, 1996-.  
 UCR registration fee committee, 1998-99

One of the prime mover for the establishment of a department of Cell Biology at UCR  
 Chair of one of the sessions at the 14th annual meeting of the GRU in Biochemistry and  
 Molecular Biology, UCR, 6/1999.

Participant in establishing institutional collaborations between UCR and the City of Hope, 1999-.  
 Member of the Search Committee of the Neuroscience faculty position (2000-01).  
 Member of the Departmental Curriculum Committee (2000 - present).  
 Member of the College Biological Sciences Committee in Charge of Teaching (2002 - present)  
 Chair of the College Committee to revise the Cell Molecular and Developmental Biology  
 undergraduate track (2002)

Member of the Campus Registration Fee Committee (2001/2002)  
 Member of the Search Committee to hire a new Campus Librarian (2002)  
 Elected member of the Campus Committee on Committees (2002-04).  
 Chair of the Instructional affairs committee of the CBNS department (2002-present)  
 Member of the Executive Committee of the CBNS department (2002- present)

### **PAST GRADUATE STUDENTS and POSTDOCTORAL FELLOWS**

Shuyan Lu	MS 2000.	Now at Pfizer
Jo Ellen Feugate	PhD 2001.	Now in Medical School at Georgetown University.
Qi Jing Li	PhD 2002.	Now a Postdoctoral Fellow at Stanford University in Mark Davis' Laboratory
Sucheta Vaingankar	Postdoc 1994-1998.	Now at the VA Hospital in San Diego
Goar Melkonian	Postdoc 1999-2001.	Now on another postdoc at UC Irvine

**CURRENT VISITORS, POSTDOCTORAL FELLOWS and STUDENTS**

1 Visiting Professor  
1 postdoctoral fellow  
4 PhD students  
2 undergraduates

**CURRENT MENTEES**

3 Assistant professors

**SOCIETY AFFILIATIONS**

American Association for the Advancement of Science  
American Society for Cell Biology  
International Cytokine Society  
Southern California Society for Microscopy and Microanalysis.  
Women for Cell Biology  
Wound Healing Society

**LANGUAGES**

English:	Speak, read, write fluently
Portuguese:	Speak, read, write fluently (native language)
French:	Speak, read
Spanish:	Read

## INVITED SEMINARS

### 1987

"Origin of the dorsal surface of the neural tube by progressive delamination of epidermal ectoderm and neuroepithelium: Implications for neurulation and neural tube defects." *Stanford University Medical School*, October.

"Ultrastructural and immunolabeling studies of the neural crest: Processes leading to neural crest cell emigration." *Department of Zoology, University of California, Davis*, December.

"Origin of the dorsal surface of the neural tube by progressive delamination of epidermal ectoderm and neuroepithelium: Implications for neurulation and neural tube defects." *Laboratory of Cell Biology, Lawrence Berkeley Laboratory*, December.

### 1988

"Formation of the dorsal surface of the neural tube by delamination of epidermal ectoderm from neuroepithelium." *Tonji Medical University, Wuhan, Hubei, Peoples Republic of China*, May.

"Formation of the dorsal surface of the neural tube by delamination of epidermal ectoderm from neuroepithelium." *Department of Cell Biology, Wuhan University, Wuhan, Hubei, Peoples Republic of China*, June.

### 1989

"Wounding, RSV-tumorigenicity and expression of the 9E3 (CEF-4) gene." *Division of Cell and Molecular Biology, Lawrence Berkeley Laboratory*, February.

"Localization of a member of the *gro* gene family in avian tissues: Expression is absent in RSV-induced tumors but is stimulated by wounding." *Department of Zoology, University of California, Davis*, November.

### 1991

"The avian *gro* gene, 9E3/CEF4, its expression is cell cycle phase-dependent and is stimulated by wounding." *Division of Cell and Molecular Biology, Lawrence Berkeley Laboratory*, May.

### 1992

"The 9E3/CEF4 gene product: A small inducible cytokine implicated in growth regulation and wound healing." *Dana-Farber Cancer Institute/ Harvard Medical School*, June.

"The 9E3 gene (chicken *gro*): An early response gene that may be involved in growth regulation and wound repair." *Department of Cell Biology, New York University Medical School*, June.

"The 9E3 gene product: A small inducible cytokine implicated in growth regulation and wound healing." *Rockefeller University, New York, July.*

### 1993

"*Gro* genes and wound repair: Overexpression of the 9E3/CEF4 and its relationship to cell growth and wound healing." *Progress in Basic Research of Wound Repair and its Application to clinical Management of Problematic Wounds -- UCLA Symposium at Breckenridge, CO, March.*

"Biochemical characteristics of the 9E3 protein." *Department of Biology, University of California, Riverside, November.*

### 1994

"The role of inflammation in the development of tumors." *Department of Biology, University of California, Riverside, October.*

### 1995

"The 9E3/CEF4 chemokine and its role(s) in wound healing." *Department of Human Anatomy, Oxford, UK, June.*

"Stimulation of the 9E3/CEF4 gene by thrombin: Mechanisms of signal transduction." *Department of Cell Biology, University of Manchester, UK, June.*

"The use of animals in biomedical research." *American Association for Laboratory Animal Science seminar series, University of California, Riverside, October.*

### 1996

"The biology of wound healing." *Contemporary UCR Women in Science Seminar Series, University of California, Riverside, March.*

"A potential molecular connection between wound healing and tumor development." *International Oncology Meetings Island of Kos, Greece. 3-5 October.*

### 1997

"From wounds to tumors: a potential molecular connection". *MARC Program Special Seminar. Department of Biological Sciences, California State University, Fullerton, CA. March.*

"Implications for the role of chemokines in wound healing and tumor development: functions of the 9e3/cef4 gene and its product." *Department of Anatomy, Virginia College of Medicine, Richmond, VA. May.*

"Functions of the 9E3/CEF4 gene and its product: Roles in wound healing and tumor development." *Dorothy and Lewis Rosenstiel Department of Biochemistry, The Mount Sinai Medical Center, New York., NY. May.*

"The cCAF chemokine: Mechanisms of stimulation by thrombin and implications for wound healing and atherogenesis". *Department of Biomedical Sciences, UC Riverside*. December.

## 1998

"Multiple functions of the cCAF chemokine: Implications for wound healing". *Centre for Cardiopulmonary Biochemistry & Respiratory Medicine, UCLMS Rayne Institute, London, UK*. January.

"Multiple functions of the cCAF chemokine: Implications for wound healing and disease". *Human Genome Sciences*. Washington, DC. January.

"Multiple functions of the cCAF chemokine: Implications for wound healing, tumor development and atherogenesis". *LBL Division of Life Sciences, Cell and Molecular Biology*. Berkeley, CA. March.

"Effects of an avian chemokine on the proliferation of cells important in granulation tissue formation and re-epithelialization". *Wound Healing Society, Salt Lake City, UT*. June.

## 1999

- "Stimulation of cCAF by thrombin occurs via the MAP kinases MEK1/ERK2 with subsequent activation of the ELK1 transcription factor. Keystone Meeting on Chemokines and Chemokine Receptors." *Keystone Symposium on Chemokines and their Receptors*, January.
- "Multiple functions of the cCAF chemokine: Implications for wound healing and disease ". *University of California Davis*, Davis, CA. May.
- "Multiple functions of the cCAF chemokine: Implications for wound healing and disease ". *Vanderbilt University*, Nashville, TN. May.
- "Mechanisms of thrombin-induced cCAF expression: Implications for wound healing". *LCRC/DBS/NCI, NIH*. July.
- "Mechanisms of thrombin-induced cCAF expression: Implications for wound healing". *Laboratory of Molecular Immunoregulation, NCI, NIH*. July.
- "Chemokines as orchestrators of cellular response to trauma" *Graduate Group in Biochemistry and Molecular Biology, University of California, Riverside*. November.

## 2000

- "Multiple roles of a CXC chemokine in wound healing involve different domains of the molecule". Pre-meeting Sub-group Symposium on The Cell Biology of Chemokines in Host Defense, Wound Healing and Disease, Annual Meeting for ASCB, December.

## 2001

- "Chemokines: Their diverse biological functions make them potential orchestrators of healing responses". *UCSF*. March.
- "Looking beyond chemokine function in Host Defense and Inflammation". Baxter Research Division in Wound Healing. Duarte CA.. March.
- "The CXC Chemokine cCAF stimulates differentiation of fibroblasts into myofibroblasts independently of TGF $\beta$ ". Short talk. Wound Healing Society Annual Meeting. May.
- "Chemokines and their roles in wound repair" Department of Biology and Chemistry, *Azusa Pacific University*. March .
- "CXC chemokines: Stimulation of differentiation of fibroblasts into myofibroblasts and acceleration of wound closure". Wound Repair Symposium of the Southern California area. March.

"Chemokines as major players in basic mechanisms of wound healing and tumorigenesis".  
Arkansas Cancer Research Center . Little Rock, Arkansas. May.

"Molecular mechanisms by which IL-8 stimulates initiation of angiogenesis". Cell Biology of Angiogenesis Mini Symposium. ASCB Annual Meeting. December.

## 2002

"Chemokines as factors in processes critical for proper healing". Division of Biomedical Sciences. University of California, Riverside. February.

"Molecular mechanisms by which IL-8 initiates angiogenesis". Wound Repair Symposium of the Southern California Area. March.

"Looking Beyond Chemokine function in host defense and inflammation". Loma Linda University . Center for genetics and Molecular Biology. April.

"Chemokines: Their diverse biological functions make them potential orchestrators of healing responses". Chemocentryx. *San Carlos, CA*. May.

"Mechanisms of chemokine function in wound repair". University of Geneva School of Medicine. Geneva, Switzerland. July.

"Chemokine functions: Looking beyond host defense and inflammation". Serono, Geneva, Switzerland. July.

"Looking beyond the functions of chemokines in host defense and inflammation". Gulbenkian Science Institute . Oeiras, Portugal. July.

"Chemokines: Their diverse biological functions make them potential orchestrators of healing responses". In the Congenital Giant Nevus: Treatment and Research" Symposium at the International Pigment Cell Conference. Amsterdam, Holland. September.

## 2003

Main speaker at the Gordon Conference on Vascular Biology. Speaking on Inflammation-induced Angiogenesis. February. Ventura, CA.

## **TEACHING EXPERIENCE**

### **UC Davis, Department of Zoology**

Teaching Assistant : General Zoology Laboratory, Fall, 1983

Embryology Laboratory, Fall, 1982; Spring, 1983; Fall, 1984.

Guest Lecturer: Neural crest cell development: Implications in neural tube closure and *spina bifida* formation. Zoology 100, Embryology, Fall, 1987.

### **Lawrence Berkeley Laboratory, Cell and Molecular Biology Laboratory**

Supervisor: Undergraduate research project, 1988-89.

Supervisor: MS thesis research project, 1989-90.

Advisor: Student attending the Science, Research and Engineering Program at Lawrence Berkeley Laboratory, 1993.

### **UC Riverside, Department of Biology**

**1993-94**

#### ***Classes:***

Instructor: Graduate Seminar Course in "Regulation of gene expression during development". Fall 1993.

Instructor: Advanced Course in Cell Biology (~120 students). Winter 1994.

Organizer and Host: General Colloquia in Biology. Spring 1994.

Guest Lecture: Mechanisms involved in wound healing. Entry level graduate Course in Cell, Molecular and Developmental Biology, Fall 1993.

Guest Lecture: Core graduate course in Advances in Cell, Molecular and Developmental Biology. Fall 1993.

#### ***Undergraduate Advising:***

Research Supervision: Two undergraduate-student research projects. One student, T. Kelly, produced data that we have now published as part of Pub. #26. He graduated in 1994 and was admitted to medical school.

General Advising (2hrs/week in the undergraduate advising office).

**1994-95**

#### ***Classes:***

Instructor: Graduate Seminar Course in "Molecular aspects of Cell-ECM interactions". Fall 1994.

Instructor: Entry Level Course in Cell and Molecular Biology (~500 students). Winter 1995.

Instructor: Advanced Course in Cell Biology (~120 students). Spring 1995.

Guest lecture: Graduate course in Advances in Cell, Molecular and Developmental Biology. Fall 1994.

Guest Lecture: Mechanisms involved in wound healing. Core graduate Course in Cell, Molecular and Developmental Biology, Fall 1994.

Organizer and Host: General Colloquia in Biology. Spring 1995.

### ***Undergraduate Advising:***

Research Supervision: Three undergraduates. One of them, Scott Burkett, received a President's Undergraduate Research Scholarship to work on the purification of cCAF during the year. He graduated *summa cum laude* in 1995. Another, William McChesney worked in the laboratory for the year and received a minigrant during the Spring quarter of his senior year to learn molecular cloning. He also graduated in 1995 and now has a job in Biotechnology.

General Advising (2hrs/week in the undergraduate advising office).

### ***Graduate Advising:***

Dissertation Advisor: One PhD student working on "The functions of cCAF during formation of the granulation tissue of wounds".

Oral Examination Committee: One student from the Environment Toxicology Graduate Program, Spring, 1995.

***Postdoctoral Advising:*** One fellow.

## **1995-96**

### ***Classes:***

Instructor: Graduate Seminar Course in "Programmed Cell Death in Development, Healing, and Disease". Spring 1996.

Instructor: Entry Level Course in Cell and Molecular Biology (~500 students). Winter 1996.

Instructor: Advanced Course in Cell Biology (~120 students). Spring 1996.

Organizer and Host: General Colloquia in Biology. Spring 1996.

### ***Undergraduate Advising:***

Research Supervision: Three undergraduates. One of them, Ronald Zhang, received a Senior Undergraduate Fellowship for Winter and Spring quarters of his Senior year (1996) to study the pathway of secretion of cCAF. Donna Ni, a Sophomore in Biology, learned molecular and cellular techniques. During the Spring Quarter, a senior in the Biology Major, Christina Wilkins took independent studies with me; she researched and wrote a review paper on "Insulin signal transduction pathways".

General Advising (2hrs/week in the undergraduate advising office).

### ***Graduate Advising:***

Dissertation Advisor: One PhD student working on "The functions of cCAF during formation of the granulation tissue of wounds".

Oral Examination Committee: One student, Department of Biology, Fall 1995.

Dissertation Committee: One student, Department of Biology, 1995-

*Postdoctoral Advising:* One fellow.

## 1996-97

### *Classes:*

Instructor: Advanced Cell Biology (~120 students). Spring 1997.

Instructor Graduate Seminar Course: "Chemokines in Wound Healing and Disease I". Spring 1997.

### *Undergraduate Advising:*

Research Supervision: Two undergraduates. Donna Ni, a Junior in Biology, learned molecular and cellular biology techniques; Ghassan Amish, a Senior in Biology, took independent studies with me during the Fall Quarter and researched and wrote a review paper on "Chemokines their receptors, and signal transduction mechanisms". In the Winter Quarter he took again independent studies from me and wrote a paper on "phorbol esters and signal transduction". I also had an honors High School student researching the topic of retrovirus in human cancer.

General Advising (2hrs/week in the undergraduate advising office).

### *Graduate Advising:*

Dissertation Advisor: Two PhD students. One working on "The functions of cCAF during formation of the granulation tissue of wounds", the other on the "Transcriptional activation of the 9E3 and MCP1 genes by thrombin and stress-inducing stimuli".

Oral Examination Committee: One student from the Environmental Toxicology Graduate Program, Fall, 1996.

Dissertation Committee: One student, Department of Biology, 1995-

*Postdoctoral Advising:* Two fellows, and co-advisor of another.

## 1997-98

### *Classes:*

Instructor: Graduate Seminar Course in "Chemokines in Wound Healing and Disease II". Spring 1998.

Co-Instructor (50%): Entry Level Course in Cell and Molecular (~500 students). Winter 1998.

Instructor: Advanced Course in Cell Biology (~120 students). Spring 1998.

Organizer and Host: General Colloquia in Biology. Spring 1998.

### *Undergraduate Advising:*

Research Supervision: Four undergraduates: Harry Miguel Green, Junior in Biology, worked on the effects of cigarette smoke on the stimulation of chemokines. Jonathan Lin, Sophomore in Biomedical Sciences, worked on determining the pattern of expression of the 9E3 gene and cCAF production in embryonic tissues and organs of newly-hatched chicks. Jennifer Fisher, Sophomore in Biology, maintained laboratory stock solutions, learned gel

electrophoresis and washed lab dishes. Willy Wong, Freshman in Biomedical Sciences, learned basic molecular techniques before embarking on a project of his own.

General Advising (2hrs/week in the undergraduate advising office for 1/2 of each quarter).

### *Graduate Advising:*

Advisory Committees: In addition to my own students, four additional graduate students in the Department of Biology.

Dissertation Advisor: Two PhD students. One working on "The functions of cCAF during formation of the granulation tissue of wounds", the other on the "Transcriptional activation of the 9E3/cCAF and MCP1 genes by thrombin and stress-inducing agents".

Dissertation Committee: One student, Department of Biology, 1995-

Masters Thesis Committee: Two students, Department of Biology, 1997-99 and 1998.

*Postdoctoral Advising:* One fellow and co-advisor of another

### **1998-99**

#### *Classes:*

Guest Lecturer for one week "On general mechanisms of signal transduction" in the Core Graduate Course in Cell, Molecular and Developmental Biology, Fall 1999.

Instructor for one week "The role of chemokines in disease" in the Core Graduate Course in Molecular Basis of Disease, Spring 1999.

Instructor: Graduate Seminar Course in "Molecular Mechanisms of Angiogenesis". Spring 1999.

Instructor: Advanced Course in Cell Biology (~130 students). Spring 1999.

### *Undergraduate Advising:*

Research Supervision: Four undergraduates: Harry Miguel Green, Senior Honors Student in Biology worked on the effects of cigarette smoke on the stimulation of chemokines. Harry graduated with many honors including outstanding male student of the Science College and the Chancellor's award for outstanding research by an undergraduate. Harry has been accepted to the California Institute of Technology as a graduate student and has received a 4-year fellowship to support his studies. Jonathan Lin, Junior Honors Student in Biomedical Sciences is determining the pattern of expression of the 9E3 gene and cCAF production in embryonic tissues and organs of newly-hatched chicks. Jennifer Fisher, Junior in Biology, maintained laboratory stock solutions, is learned tissue culture and washed lab dishes. Willy Wong, Sophomore in Biomedical Sciences, is worked on obtaining 5' deletion of the MCP-1 promoter for transcription activation studies and examined the systematic presence of consensus elements for the binding of transcription factors to the promoters of chemokine genes.

General Advising (2hrs/week in the undergraduate advising office for 1/2 of each quarter).

### *Graduate Advising:*

Advisory Committees: In addition to my own students, five other graduate students in the Department of Biology.

Dissertation Advisor: Three PhD students. One working on "The functions of cCAF during formation of the granulation tissue of wounds", another on the "Transcriptional activation of the 9E3/cCAF and MCP-1 genes by thrombin and stress-inducing agents" and the third on "The role of 9E3/cCAF in tumor development".

Masters Thesis Committee: Two students, Department of Biology, 1997-99 and 1998.

Dissertation Committee: One student, Department of Biology, 1995-1999.

Orals Dissertation Committee Chair: One student, Department of Biology, 1999-

*Postdoctoral Advising:* Co-advisor of one fellow.

## 1999-00

### *Classes:*

Instructor, Biology 111. Cell Biology (~130 students). Fall 1999.

On Sabbatical Leave the remainder of the year at NCI, Frederick, MD.

### *Undergraduate Advising:*

Research Supervision: Four undergraduates during the summer: Harry Miguel Green, a first year graduate student at Caltech, is continuing to work this summer to complete his projects so that they can be written and submitted for publication. Jonathan Lin, Junior Honors Student in Biomedical Sciences, has been accepted to the UCR/UCLA MD program but is continuing his studies this summer. Jennifer Fisher, Senior in Biology, is continuing to maintain laboratory stock solutions and learning techniques as she prepares to take the exam for entry into Veterinary School. William Wong, Junior in Biomedical Sciences, will be coming back to the lab to continue his project after he takes the MCAT exams. Allan Wong, Sophomore at Harvard University, is spending the summer as a volunteer in my lab learning molecular cloning techniques.

### *Graduate Advising:*

Advisory Committees: In addition to my own students, five additional graduate students in the Department of Biology.

Dissertation Advisor: Four PhD students. One working on "The functions of cCAF during formation of the granulation tissue of wounds", another on the "Transcriptional activation of the 9E3/cCAF and MCP-1 genes by thrombin and various toxicants", the third on "The role of 9E3/cCAF in tumor development" and the fourth on "The effects of cigarette smoke on cell death".

Masters Thesis Committee: Two students, Department of Biology, 1997-99 and 1998.

Dissertation PhD Committee: One student, Department of Biology, 1998-

*Postdoctoral Advising:* Co-advisor of one fellow.

## 2000-01

***Classes:***

Guest Lecturer for one week "On general mechanisms of signal transduction" in the Core Graduate Course in Cell, Molecular and Developmental Biology, Fall 2000.

Co-Instructor (50%): Entry Level Course in Cell and Molecular (~250 students). Winter 2000.

Instructor, Biology 111. Cell Biology (~130 students). Spring 2001.

Instructor for one week "The role of chemokines in disease" in the Core Graduate Course in Molecular Basis of Disease, Spring 2000.

Instructor: Graduate Seminar Course in "Molecular Mechanisms of Angiogenesis". Spring 2000.

***Undergraduate Advising:***

Research Supervision: William Wong, senior in Environmental Sciences, has won a Univ. of California President's Fellowship for his senior year to perform research on the effects of cigarette smoke on the activation of MCP-1 expression in aortic endothelial cells.

***Graduate Advising:***

Advisory Committees: In addition to my own students, five additional graduate students in the Department of Biology.

Dissertation Advisor: Four PhD students. One working on "The functions of cCAF during formation of the granulation tissue of wounds", another on the "Transcriptional activation of the 9E3/cCAF and MCP-1 genes by thrombin and various toxicants", the third on "The role of 9E3/cCAF in tumor development" and the fourth on "The effects of cigarette smoke on cell death".

Masters Thesis Committee: Two students, Department of Biology, 1997-99 and 1998.

Dissertation PhD Committee: One student, Department of Biology, 1998-

***Postdoctoral Advising:*** Co-advisor of one fellow.

**2001-02**

***Classes:***

Organizer: Cell and Molecular Biology Seminar Series, Fall quarter 2001.

Instructor: Graduate Seminar Course in "Molecular Mechanisms of Angiogenesis". Fall 2001.

Instructor: Graduate Seminar Course in "Stem cells and their potential in ameliorating disease". Spring 2002.

Instructor for one week "On mechanisms of chemokine function in healing and tumorigenesis" in the Biomedical Sciences course on Molecular Basis of Disease. Spring 2002.

Instructor for one week "Developmental mechanisms of angiogenesis" in the Core Graduate Course in Cell, Molecular and Developmental Biology, Spring 2002.

***Undergraduate Advising:***

Research Supervision: Joseph Manlolo, a junior in the Biological Sciences major, is a MARCU fellow and has also won a Univ. of California Riverside Chancellor's Fellowship for his senior year to perform research on "Mapping the expression pattern of human IL-8 in

normal and tumor tissues". Erick Martinez, another MARCU fellow, will be working with a postdoc on a well defined project in the context of inflammation-induced angiogenesis.

***Graduate Advising:***

Advisory Committees: In addition to my own students, two additional graduate students in the graduate group of Cell Molecular and Developmental Biology.

Dissertation Advisor: Four PhD students. Two working on "The role of chemokines in wound healing" and two on "The effects of cigarette smoke on chemokine expression and function".

Dissertation PhD Committee: Several students in the Graduate Program in Cell, Molecular, and Developmental Biology, 1998-present

***Postdoctoral Advising:*** Advisor of two fellows.

## PUBLICATIONS

1. Borges, M.L. and **M. Martins** (1972). Etiology of tobacco reversion. *Agronomia Lusitana*, **33**: 443-453 (in Portuguese).
2. Ascencao, L.M., M.L. Borges and **M. Martins** (1974). Ultrastructural and physiological changes in *Nicotiana tabacum* L. leaves infected with *Tobacco Vein Mosaic Virus*. *Agronomia Lusitana* **35**: 232-241 (in Portuguese).
3. Antunes, T., M.L. Borges and **M. Martins** (1974). Cell ultrastructure of *Vicia faba* L. infected with *Broad Bean Mosaic Virus*,. *Agronomia Lusitana* **35**: 465-477. (in Portuguese).
4. Portela-Gomes, G., **M. Martins** and J. Pinto Correia (1974). Ultrastructural changes of Jejunal epithelial cells in liver cirrhosis, *Scand. J. Gastroent.* **9**: 657-663.
5. **Martins-Green, M.** (1978). A simple procedure to obtain thick flat cornea sections for optical microscopy, *Stain Technology* **53**: 296-298.
6. Roth, A.R., J.L. Keltner, W.G. Ellis and **M. Martins-Green** (1979). Virus-simulating structures in the optic nerve head in Creutzfeldt-Jakob disease, *Amer. J. Ophthalmology* **87**: 827-833.
7. **Martins-Green, M.** and A.R. Roth (1982). Tubular aggregates in the non-pigmented epithelial cells of the ciliary body of the Rhesus Monkey. *J. Ultrastruct. Res.* **80**: 206-213.
8. **Martins-Green, M.** and C.A. Erickson (1986). The development of neural tube basal lamina during neurulation and neural crest cell emigration in the trunk of the mouse embryo. *J. Embryol. Exp. Morph.* **98**: 219-236.
9. **Martins-Green, M.** (1987). Ultrastructural and immunolabeling studies of the neural crest: Processes leading to neural crest cell emigration. PhD Dissertation, Univ. Calif., Davis, 194pp.
10. **Martins-Green, M.** and C.A. Erickson (1987). Basal lamina is not a barrier to neural crest cell emigration: Documentation by TEM and by immunofluorescent and immunogold labeling. *Development* **101**: 517-533.
11. **Martins-Green, M.** and K.T. Tokuyasu (1988). A pre-embedding immunolabeling technique for basal lamina and extracellular matrix molecules. *J. Histochem. and Cytochem.* **36**: 453-458.

12. **Martins-Green, M.** (1988). Origin of the dorsal surface of the neural tube by progressive delamination of epidermal ectoderm and neuroepithelium: Implications for neurulation and neural tube defects. *Development* **103**: 687-706.
13. **Martins-Green, M.** and C.A. Erickson (1988). Patterns of cholinesterase staining during neural crest cell morphogenesis in mouse and chick embryos. *J. Exp. Zool.* **247**: 62-68.
14. **Martins-Green, M.** (1990). Transmission electron microscopy and immunolabelling of tissues for light and electron microscopy. In *The Postimplantation Mammalian Embryo: A Practical Approach*, A. Copp, ed, pp.127-154, IRL Press, Oxford, UK
15. **Martins-Green, M.** and M.J. Bissell (1990). Localization of 9E3/CEF4 in avian tissues: Expression is absent in RSV-induced tumors but is stimulated by injury. *J. Cell Biol.* **110**: 581-595. (photo on journal cover)
16. Stoker, A., C. Streuli, **M. Martins-Green** and M.J. Bissell (1990). Designer microenvironments for the analysis of cell and tissue function. *Current Opinion in Cell Biol.* **22**: 864-874.
17. **Martins-Green, M.**, C. Tilley, R. Schwarz, C. Hatier, and M.J. Bissell (1991). Wound-factor-induced and cell cycle phase-dependent expression of 9E3/CEF4, the avian *gro* gene. *Cell Regulation* **2**: 739-752. (photo on journal cover)
18. **Martins-Green, M.**, A. Aotaki-Keen, L. Hjelmeland and M.J. Bissell. (1992) The 9E3 protein: Immunolocalization *in vivo* and evidence for multiple forms in culture. *J. Cell Science* **101**: 701-707.
19. **Martins-Green, M.**, N. Boudreau, and M.J. Bissell (1994). Inflammation is responsible for the development of wound tumors in RSV-infected newly-hatched chicks. *Cancer Res.* **54**:4334-4341.
20. **Martins-Green, M.** and M.J. Bissell (1995). Cell-extracellular matrix interactions in development. *Sems. in Dev. Biol.* **6**:149-159.
21. Fang, K., **M. Martins-Green**, L. T. Williams and H. Hanafusa (1996). Molecular cloning of chicken protein tyrosine phosphatase  $\alpha$  and its expression in the central nervous system. *Molecular Brain Research* **37**: 1-14. (photo on journal cover)
22. **Martins-Green, M.**, M. Stoeckle, S. Wimberly, A. Hampe and H. Hanafusa (1996). The 9E3/CEF4 cytokine: kinetics of secretion, processing by plasmin, and interaction with extracellular matrix. *Cytokine* **8**: 448-459.

23. **Martins-Green, M.** (1997) Dynamics of Cell-ECM interactions with implications for tissue engineering. In *Principles of Tissue Engineering*. Ed. R.P. Lanza, W.L. Chick and R. Langer. R.G. Landes Co. pp 25-48 (invited review).
24. **Martins-Green, M.** and H. Hanafusa (1997). The 9E3/CEF4 gene and its product the chicken Chemotactic and Angiogenic Factor (cCAF): potential roles in wound healing and tumor development. *Cytokines and Growth Factor Rev.* **8**(3): 219-230.
25. Vaingankar, S. and **M. Martins-Green** (1998). Thrombin activation of the 9E3/CEF4 chemokine involves tyrosine kinases including c-src and the EGF receptor. *J Biol Chem.* **273**:5226-5234.
26. **Martins-Green, M.,** and J.E. Feugate (1998). The 9E3/CEF4 gene product is a chemotactic and angiogenic factor that can initiate the wound healing cascade *in vivo*. *Cytokine* **10**:522-535.
27. **Martins-Green M.,** and T. Kelly (1998). The chicken chemotactic and angiogenic factor (cCAF): Its Angiogenic properties reside in the C-terminus of the molecule. *Cytokine* **10**:819-829.
28. Li, QJ., S. Vaingankar, H. M. Green, and **M. Martins-Green** (1999). Activation of the 9E3/cCAF chemokine by phorbol esters occurs via multiple signal transduction pathways that converge in MEK1/ERK2 and activate the Elk1 transcription factor. *J. Biol. Chem.* **274**:15454-15465.
29. **Martins-Green, M.** (2000) Dynamics of cell-ECM interactions with implications for tissue engineering. In *Principles of Tissue Engineering*. 2nd Edition, Eds. R.P. Lanza, W.L. Chick and R. Langer. R.G. Landes Co. (invited). pp33-55.
30. Melkonian, G., C. Li, W. Zheng, P. Talbot and **M. Martins-Green** (2000). Normal patterns of angiogenesis and extracellular matrix deposition in chick chorioallantoic membranes are disrupted by mainstream and sidestream cigarette smoke. *Toxicology and Applied Pharmacology* **163**(1):26-37.
31. **Martins-Green, M.** (2000). The 9E3/cCAF chemokine. Chapter 10012 in "A Compendium of Cytokines and Other Mediators of Host Defense" (eds. J. Oppenheim, S. Durum), Academic Press Ltd.
32. **Martins-Green, M.,** J. L. Bixby, T. Yamamoto, T. Graf and M. Sudol (2000). tissue specific expression of Yrk kinase: implications for differentiation and inflammation. *International J. of Biochem. and Cell Biol.* **32**:351-364.
33. Li, QJ., S. Lu, R. Ye and **M. Martins-Green** (2000). Isolation and characterization of a novel CXC chemokine receptor gene. *Gene* **257**:307-317.

34. Li, QJ., S. Vaingankar, F. Sladek, **M. Martins-Green** (2000). Novel nuclear target for thrombin: activation of the Elk1 transcription factor leads to chemokine gene expression. *Blood* 96(12):3692-3702.
35. Liang, TS, JK Hartt, S. Lu, **M. Martins-Green**, J-L Gao, PM Murphy (2001). Cloning, mRNA distribution, and functional expression of an avian counterpart of the chemokine receptor/HIV coreceptor CXCR4. *J. Leukocyte Biol.* 69:297-305.
36. **Martins-Green, M.** (2001). The chicken chemotactic and angiogenic factor, a CXC chemokine. Special Issue on Angiogenesis, J. Laurent and L. Claesson-Welsh (eds). *International J. of Biochem. and Cell Biol.* 33:427-432.
37. Feugate, J.E., QJ Li, L Wong, **Martins-Green, M.** (2002). The CXC chemokine cCAF stimulates differentiation of fibroblasts into myofibroblasts and accelerates wound closure in vivo. *Journal of Cell Biology* 156: 161-172.
38. **Martins-Green, M.** (2002). Functions of the chicken IL-8 (cCAF) in wound healing. *Wounds* 14:187-198 (Invited Review).
39. Feugate, J.E., Wong, L, Li, QJ and **Martins-Green, M.** (2002). The CXC chemokine cCAF stimulates precocious deposition of ECM molecules by wound fibroblasts, accelerating development of granulation tissue. *BMC Cell Biology* 3:1-15.
40. Salcedo, R., **M. Martins-Green**, B. Gertz, J. J. Oppenheim, and W. J. Murphy (2002). Combined administration of human IL-8 and EGFR antibodies results in synergistic anti-tumor effects on human breast carcinoma xenografts. *Clin. Cancer Research* 8 (8): 2655-2665.
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43. Salcedo, R., X. Zhang, H. A. Young, M. Nelson, K. Wasserman, W.-H. Ma, **M. Martins-Green**, W. J. Murphy, and J. J. Oppenheim (2002). Angiogenic effects of prostaglandin E2 are mediated by up-regulation of CXCR4 on human microvascular endothelial cells. Submitted .
44. Li, Q-J., V. Parpura, S. Lu and **M. Martins-Green.** Differential signaling mechanisms triggered by CXCL-8 chemokines and their terminal peptides through CXC receptors 1. In preparation.

45. **Martins-Green, M.** and Q-J Li. Engineering human skin in culture using primary adult cells. In preparation.
46. Green, H. M., Q-J. Li, , L. Wong, E. Nothnagel, and **M. Martins-Green.** Cigarette smoke stimulates chemokine expression by fibroblasts, cells important in granulation tissue development. In preparation.
47. Wong, L.S., H.M. Green, J.E. Feugate, Q-J Li, E. Nothnagel and **M. Martins-Green.** Mainstream whole “first-hand” cigarette smoke affects the structure and function of mitochondria. In preparation.
48. Wong, L.S., H.M. Green, E. Nothnagel and **M. Martins-Green.** Sidestream Whole Cigarette Smoke affects the Structure and Function of the Endomembrane System. In preparation.
49. Feugate, J.E. and **M. Martins-Green.** Chemokines in wound healing. Cytokine and Growth Factor Reviews. In preparation.

## **ABSTRACTS**

- A1. **Martins-Green, M.** and C.A. Erickson (1985). Neural crest cells: Initiation of migration is not triggered by disruption of basal lamina. *Cell Differentiation* **16**: Abs. Suppl., 25.
- A2. **Martins-Green, M.** and C.A. Erickson (1986). Control of separation of the epidermal ectoderm from neural ectoderm during neurulation. *J. Cell Biol.* **103**: 89a.
- A3. Loring, J.F., C.A. Erickson and **M. Martins-Green** (1986). Patterns of neural crest migration in avians and mammals. *J. Cell Biol.* **103**: 232a.
- A4. **Martins-Green, M.**, R.A. Ramos and M.J. Bissell (1989). Wounding, RSV-tumorigenicity and expression of the 9E3 (CEF-4) gene. *J Cell Biol.* **107**: 264a.
- A5. **Martins-Green, M.** and M.J. Bissell (1989). Expression of 9E3 (CEF-4) *in vivo* and in culture. *J. Cell Biol.* **109**: 121a.
- A6. **Martins-Green, M.**, C. Tilley, R. Schwarz, C. Hatier and M.J. Bissell (1990). The effect of specific growth factors on the expression of the chicken *gro* gene (9E3/CEF4). *J. Cell Biol.* **111**: 499a.
- A7. **Martins-Green, M.**, A. Aotaki-Keen, M.J. Bissell and L. Hjelmeland (1990). Development of an antibody to the protein of the chicken *gro* (9E3/CEF4). *J. Cell Biol.* **111**: 499a.
- A8. **Martins-Green, M.**, A. Aotaki-Keen, L. Hjelmeland and M.J. Bissell (1991). Development of an antibody to the product of the chicken *gro* gene and immunolocalization in tissues of newly hatched chicks. *J. Cellular Biochem. Suppl.* **15F**: 189.
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